

Preface

The concept of “landscape management labor accounts” was developed through the on-site research experiences reported in *Basic and Clinical Environmental Approaches in Landscape Planning* (Shimizu et al. 2014). *Basic and Clinical Environmental Approaches in Landscape Planning* was published as a result of the Global Center of Excellence (GCOE) Program “From Earth System Science to Basic and Clinical Environmental Studies,” funded by the Ministry of Education, Culture, Sports, Science and Technology starting in 2009 (Nagoya University Global Center for Excellence Program 2013). In the process of publishing, we were keenly aware of the importance of clinical environmental approaches in landscape planning, which is “diagnostic” by analyzing how the earth–life system interacts with human society and “treatment-based” by providing technological or regulatory solutions to environmental problems. Moreover, it became clear that local landscapes are faced with serious management challenges in the future, with a rapidly aging and shrinking population. Thus, gaining a holistic understanding of how much and what kind of management is needed across various landscapes today and into the future is critical. Landscape management labor accounts is one methodology for grasping them.

Contents of This Book

This book is divided into four parts.

Part I

In this part, the current state of landscape management in Japan is discussed and the basic concept of “landscape management labor accounts” is proposed. In Chap. 1, the background, concept, and perspective of this research are described. Recently, landscape management has been recognized as important to keeping landscapes sustainable. This is particularly true in mature countries such as Japan, which is

grappling with a population that is both rapidly aging and shrinking, where it is becoming more and more difficult to manage landscapes. Some landscapes must be returned to nature while other landscapes must be maintained appropriately by human labor. Landscape management labor accounts are a new tool to evaluate the amount and density of labor forces needed to maintain different landscape types in an integrated manner, including urban gardens, farmlands, and forests. Chapter 2 shows typical landscape types extracted by principal component and cluster analysis, as well as their distribution patterns and characteristics. Seven basic landscape types are described, namely, the paddy field type, urban paddy field mixed type, paddy field Satoyama type, urban type, other field Satoyama type, nature type, and other field type. These landscape types have a strong relationship with Japanese geography. The basic landscape types are compared with land use and population changes from the past to the present. Finally, decreasing landscape management sustainability is described by comparing current population with projected population levels in 2050.

Part II

In this part, changing policies, research, and contemporary issues in landscape management are discussed, covering various landscapes including urban, urban periphery, agricultural, plantation forest, water, and coastal areas. In urban areas, the increase of sealed parking lots and unmanaged residential properties degrades the urban ecological environment, and inadequate landscape management budgets threaten the quality of parks and street trees. Unplanned urban sprawl in farmlands on the urban periphery causes chaotic landscapes that degrade land, as well as unmanaged secondary forests that lead to ecosystem disservices, such as loss of aesthetic value and damage from insects and animals. Land improvement projects in agricultural areas led by the national government bring production and efficiency but harm plant and animal habitat and reduce biodiversity. Additionally, many farmers are elderly and are expected to soon stop farming, leading to the rapid abandonment of farmland. In water landscapes, well-developed artificial structures, such as high levees and straightened rivers, can mitigate high-probability disasters but bring about habitat loss and reduced biodiversity. However, naturalized rivers, vegetated channels, and temporary ponds, as in alluvial riverscapes, need much labor management. In coastal landscapes, most parts of banks are covered by concrete, tidal flats are converted to artificial lands, and natural landscapes are mostly lost. Additionally, natural environments in the oceans, such as seaweed beds, are degrading rapidly. To recover from the degraded condition discussed above, a sufficient labor force is needed.

Part III

In this part, landscape labor accounts are calculated specifically for several case studies in the Chubu metropolitan area of Japan, the central part of the island of Honshu. Landscape elements, landscape units, and neighborhood landscape complex units comprise the calculation base for labor accounts and densities. Labor

accounts and labor densities in various scales are also defined. As a case study in an urban landscape, labor accounts and densities in Nagoya City are considered, including public parks, roadside trees, private gardens, and kitchen gardens. Next, the labor accounts and densities of the secondary urban forest in Fujimaki Town in Nagoya City, where local residents are engaged in secondary forest management, are examined as an urban forest neighborhood landscape complex unit. Asami District in Mie Prefecture is examined as an example of a flatland farmland neighborhood landscape complex unit. Nyu District, which is managed by a farming cooperative, is studied as a paddy field Satoyama neighborhood landscape complex unit. Kayumi District, where tea plantations are developed, is examined as an example of another field Satoyama neighborhood landscape complex unit. Shima District, which is famous for its traditional women divers, is examined as an example of a coastal neighborhood landscape complex unit. Finally, the integration of landscape labor accounts, from the small scale of neighborhood landscape complexes to the large regional scale of the Chubu metropolitan area, is also considered.

Part IV

In Part IV, planning perspectives related to each landscape type are considered and discussed. Using the concept of landscape labor accounts and densities, problems related to the management of each landscape type may be seen more clearly and appropriate consideration with respect to sustainable management can be described.

In planning for existing urban areas, considering the fact that further development of new parks through land acquisition is financially difficult, it is important to maintain and increase green spaces within private properties and streets. This may be accomplished through the new integrated urban planning system, with a high priority on the ecological benefits of green spaces in existing urban areas. In urban periphery planning, urban–rural mixed land use and depopulation are serious challenges. Land-use realignment under the idea of “living in the garden” may be key in the future. In forest planning, improvements in the ecological, economic, and social aspects of unmanaged plantation forests are the most important issues, and the development of the system of “foresters” as forest managers is discussed. Landscape management labor accounts can contribute to recognizing unmanaged areas, estimating needed manpower, and anticipating costs. Regarding inland water systems, the process of ecosystem degeneration is reviewed and visions and policies to rehabilitate them are discussed. The most important issue in rural planning with an aging and shrinking society is the possibility of continued farming and survival of the local community. The development of corporate or cooperative farming and the maintenance of collaborative works of individual farmers or residents are discussed.

In coastal planning, the planning connectivity from forest areas to coastal areas and the development of planning methodologies based on river basins will be more important moving forward. Landscape management labor accounts may contribute to the establishment of such kinds of thinking. The relationship between landscape

management and ecosystem services is also discussed, with a case study in Nagoya City. Finally, perspectives related to sustainable labor force management of landscapes are considered.

Nagoya, Japan

Hiroyuki Shimizu
Chika Takatori
Nobuko Kawaguchi

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